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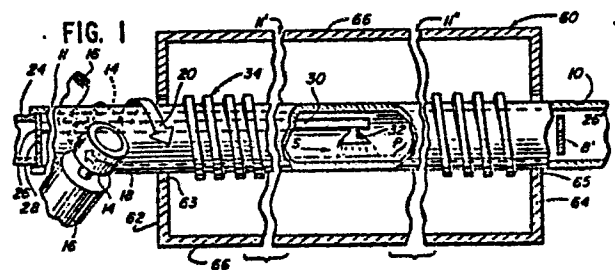
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Apparatus for and method of metalizing internal surfaces of metal bodies such as tubes and pipes.

An apparatus and method for metalizing the interior of pipes or tubes (10) is disclosed. The base metal pipe or tube (10) to be internally metalized is moved axially while simultaneously being rotated at a relatively high rpm. A first pre-heat means, preferably an induction heating means (34) heats a portion of the pipe (10) and its interior to a first elevated temperature, and particles of the metalizing material are deposited into the interior of the pipe (10) to be heated to said first elevated temperature, whereat the particles become at least molten or semi-molten and part of a metalizing mass that is at least semi-fluidized. The rotation of the pipe (10) distributes the fluidized particles into laminae which, under the further influence of centrifugal forces, automatically distributes the semi-fluidized particles effectively, to the end that in the final product the pipe or tube (10) has therein a layer or annulus of metalizing material that strongly adheres to the inner wall of the tube or pipe (10), that unexpectedly displays great uniformity of character and of innermost surface concentricity, unusual hardness and compactness, and develops an excellent bond between the outermost lamina of metalizing material and the inner wall of the base or substrate. The fluidized metalizing material is bonded together and to the

body substrate by application of a second induction heat at a higher heat level or temperature at which bonding occurs between the laminae of metalizing material and between the metalizing material and the base material of the tube or pipe (10). Preferably the process is performed in the presence of a non-oxidizing gas such as pre-heated nitrogen. Various means for delivering the metalizing powder to the interior of the pipe (10), at a region between the region of application of the induction heating pre-heat (34) and the region of induction heating to a fusing heat (36), are disclosed. One such means includes a cantilevered delivery tube (30) and spray head from which a shower (5) of metalizing particles is discharged at a controlled rate against the inner wall of the rotating tubular body being metalized. Another such means includes a rotating auger (52) located in a surrounding tube, with rotation of the auger (52) operating to deliver metalizing material at a controlled rate onto the region of the pipe located between the two induction heating means (34, 36). A treating chamber (60) is provided to shelter the induction heating means (34, 36) and the portion of the body that is being acted upon by said heating means (34, 36).





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
A	FR-A-1 244 133 (BUNDY TUBING COMPANY) * Figure *		C 23 C 24/10
A	CH-A- 451 665 (GEBR. NUSSBAUM & CO.)		
A,D	US-A-3 654 895 (J.A. BLOOM et al.)		
E,D	EP-A-0 094 759 (INDUCTALLOY CORP.)		
			TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
			C 23 C F 27 B F 16 L B 05 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23-10-1984	Examiner STEIN K.K.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			